

ADDITIONAL NOTES ON THE GENUS *GHINIA*. II

Harold N. Moldenke

*GHINIA* Schreb.

Additional & emended synonymy: *Kaempferia* Houst ex Spach, Hist. Nat. Veg. 9: 227, in syn. 1840 [not *Kaempferia* L., 1737]. *Guinea* Millsp. ex Mold., Phytologia 47: 449, in syn. 1981.

Additional & emended bibliography: Neck., Elem. Bot. 1: 355--356. 1790; Sw., Fl. Ind. Occ. Prod. 2: 1087--1090, pl. 21 [sup.]. 1800; Meisn., Pl. Vasc. Gen. 2 [Comment.]: 200 & 206. 1840; J. C. Willis, Dict. Flow. Pl., ed. 5, 638 (1925), ed. 6, imp. 1, 638 (1931), ed. 6, imp. 2, 638 (1948), ed. 6, imp. 3, 638 (1951), ed. 6, imp. 4, 638 (1955), ed. 6, imp. 5, 638 (1957), and ed. 6, imp. 6, 638. 1960; Sw., Nov. Gen. Sp. Pl., imp. 2, 94. 1962; Liogier, Rhodora 67: 349. 1965; G. Taylor, Ind. Kew. Suppl. 13: 73. 1966; Mold., Phytologia 47: 447--461, 504, 507, 508, 511, & 512. 1981.

*GHINIA CURASSAVICA* (L.) Oken

Emended synonymy: *Ischnia verbenacea* P.DC. ex Meisn., Pl. Vasc. Gen. 2 [Comment.]: 206. 1840.

Additional bibliography: Meisn., Pl. Vasc. Gen. 2 [Comment.]: 206. 1840; Mold., Phytologia 47: 448--458. 1981.

Meisner (1840) follows DeCandolle in placing the genus *Ischnia* P.DC. and *I. verbenacea* P.DC. in the *Pedaliaceae*. Taylor (1966) continues this erroneous disposition of the genus and species.

*GHINIA SPICATA* (Aubl.) Mold.

Additional bibliography: Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 148. 1895; Solered., Bull. Herb. Boiss., ser. 1, 6: 627. 1898; Solered., Syst. Anat. Dicot. Ergänz. 255. 1908; M. Kunz, Anatom. Untersuch. Verb. 34. 1911; Knuth, Feddes Repert. Spec. Nov. 43: [Init. Fl. Venez.] 599. 1927; Stapf, Ind. Lond. 3: 279. 1930; Mold., Phytologia 1: 169. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 123. 1938; Mold., Carnegie Inst. Wash. Publ. 522: 150--151. 1940; Mold., Prelim. Alph. List Inv. Names 26, 30, & 43. 1940; Mold., Alph. List Inv. Names 25, 29, & 43. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 21, 36, & 93. 1942; Mold., Alph. List Inv. Names Suppl. 1: 21. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 36, 63, 68, 77, & 185. 1949; Mold., Résumé 41, 43, 71, 75, 78, 89, 251, 295, 309, 353, & 456. 1959; Sw., Nov. Gen. Sp. Pl., imp. 2, 94. 1962; J. A. Steyerm., Act. Bot. Venez. 3: 156. 1968; Gibson, Fieldiana Bot. 24 (9): 228--230, fig. 45. 1970; Mold., Fifth Summ. 1: 79, 81, 123, 129, 132, 133, 150, & 425 (1971) and 2: 520, 548, 614, 639, & 879. 1971; Mold., Phytologia 23: 416 & 431. 1972; Troncoso, Darwiniana 18: 323 & 411. 1974; López-Palacios, Revist. Fac. Farm. Univ. Andes 15: 27, [fig. 6]. 1975; Mold., Phytologia 34: 252 (1976) and 36: 40. 1977; López-Palacios, Fl. Venez. Verb.

312--316, 649, 650, & 653. 1977; López-Palacios, *Revist. Fac. Farm. Univ. Andes* 20: 24. 1979; Mold. & Bromley in Harley & Mayo, *Toward Checklist Fl. Bahia* 189. 1980; Mold., *Phytol. Mem.* 2: 71, 74, 78, 115, 122, 124, 126, 142, 354, 380, 405, & 548. 1980; Mold., *Phytologia* 47: 409 & 416. 1981.

Illustrations: Aubl., *Hist. Pl. Guian. Franç.* 2: pl. 268. 1775; Sw., *Fl. Ind. Occ. Prod.* 2: pl. 21. 1800; Gaertn. f., *Fruct. Sem. Pl.* 3: pl. 213 (inf.). 1805; Poir. in Lam., *Encycl. Méth. Bot.* 3: pl. 542. 1819; Gibson, *Fieldiana Bot.* 24 (9): 229, fig. 45. 1970; López-Palacios, *Revist. Fac. Farm. Univ. Andes* 15: 27, [fig. 6]. 1975; López-Palacios, *Fl. Venez. Verb.* [313] & [315]. 1977.

A slender, erect, branched, perennial herb, to about 1.5 m. tall, usually lower; branches and branchlets spreading, strict or subarcuate, more or less minutely pilose-hirtellous with short uncinete hairs, acutely tetragonal and more or less margined, the leaf-bearing sides 2-costate, alternately 3-striate and 3-sulcate, the costae and margins pale and thick; leaves decussate-opposite; petioles very slender, 3--6 mm. long, rather densely hirsute; leaf-blades green, small, thinly chartaceous, ovate or subovate to subrotund-elliptic, 7--16 mm. long, 3--12 mm. wide, often plicate or slightly so, apically obtuse (in outline), basally subtruncate or truncate to subcuneate, marginally rather coarsely incised- or subincised-serrate with sharply acute teeth and ciliate, rather sparsely hirsute or pilose-hirsute with scattered hairs above, more densely hirsute (especially along the venation) beneath, penninerved, often plicate at the vein confluence; inflorescence racemiform, axillary, not truly opposite but regularly unilateral on the branches, solitary, 2.5--8 cm. long, 2--8-flowered, ascending; rachis tetragonal, filiform, finally strict; puduncles equaling the subtending leaf; flowers distant, pedicellate; pedicels about 2 mm. long, uncinete-pilose; calyx green with darker veins, tubular, membranous, 5-plicate, during anthesis about 4 mm. long and 1--1.5 mm. wide, the herbaceous ribs excurrent into subulate teeth 1 mm. long; corolla small, blue or bluish to lavender, violet, or occasionally purplish-white, about 7 mm. long; fruiting-calyx spreading-campanulate, about 4 mm. long and wide, conspicuously 5-costate, the ribs prominent and projecting about 1 mm. at their apex, thin and translucent between the ribs, sparsely uncinete-pilose (especially on the ribs); drupes small, glossy black and juicy when mature and fresh, turbinate, muticous (not spinose, the spines being represented by several small bumps at the very obtuse or rounded to subtruncate and slightly depressed apex, often with a rudimentary style-base), about 3 mm. long and wide, glabrous.

The species ranges from Central America, through Venezuela and the Guianas, to tropical Brazil; sometimes cultivated. It is based on an unnumbered Aublet collection from "à l'île de Cayenne, sur les bords des sentiers & des chemins" in French Guiana. This rather widespread species occurs in open places and scrubland, as well as on pine ridges. The name, *Tamonea mutica* Sw., is merely an illegitimate substitute name for the *T. spicata* of Aublet.

Collectors, on the labels accompanying their specimens, describe

this plant as a small, erect, branching, bushy herb, 0.3--1.5 m. tall, with a woody base, or a low shrub or subshrub, of weedy habit, the stems to 1.2 cm. in diameter, the leaves very small, plicate or slightly so, slightly rugose, varying from rich-, deep-, or dark-green to mid- or dull-green above, and with "sulcate nerves" [=impressed veins], pale- or gray-green beneath, the calyx green with darker veins, and the fruit green or greenish and "turning black", glossy, and juicy when ripe. This "black" and "juicy" character of the fruit, so often mentioned by collectors and authors, is certainly not evident on herbarium specimens!

The corollas are described as having been "blue" on *Croat* 24040, *Eiten & Eiten* 4178, *Gentle* 4134, *Lanjouw & Lindeman* 1764, *Liesner & Dwyer* 1429, *Schipp* 612, *Seymour & Robbins* 5820, *Splitgerber* 744, and *Wullschlägel* 784, "dark-blue" on *Steiermark & al.* 105948, "bluish" on *Broadway* 126, "lavender" on *Croat* 23513, "violet" on *Contreras* 547 and *Tamayo* 2683, "lilac" on *Steiermark* 45247, "amethyst" on *Ruiz-Terán & López-Palacios* 11577, "mauve" on *Harley* 17497, "mauve with darker lines on lower lip and yellow throat" on *Harley* 15881, "blue or amethyst with a yellow throat" on *Ruiz-Terán & López-Palacios* 11496, "rather dark violet-blue with a reddish-orange throat" on *Harley* 17560, "purple" on *Gentle* 8482 & 9473, "bright-purple" on *Forest Dept. Br. Guian. B.404*, "violet with darker lines in the throat" on *Harley* 18491, "violet, white at base" on *Davidse & al.* 4633, "pinkish" on *Gentle* 6687, "pinkish-white" on *Gentle* 6687, and "whitish" on *Aristeguieta* 5898.

Collectors have found this plant growing in sandy soil, parched ground, savannas and the margins of savanna clearings, rocky areas and igneous outcrops along streams, the edges of hammocks, open places and waste ground along streams, scrubland, pinal, caatinga, and restinga, on low pine ridges, at the edge of hard-bush, on large igneous rock outcrops, in shady places and woods, in high evergreen rainforests, and in "evergreen rainforest with disturbed margins at the seashore", at altitudes of sealevel to 950 meters, in flower in every month of the year and in fruit from January to March and May to September.

The Eitens encountered it "in open stony ground on descent from low plateau in disturbed chapada". Davidse and his associates found it "in *Trachypogon* savannas on low hills with very widely spaced *Curatella americana*." Harley and his associates encountered it in "mixed restinga vegetation on sand with high forest, low trees, and shrubs, and sedge meadows with open wet areas on white sand", "in coastal evergreen forest with disturbed margins, rocks by the sea, and semi-cultivated ground", in "high coastal evergreen forest in heavy loam soil", and in "waste ground by river with damp grassland and scattered woodland". Schipp, who erroneously describes the fruits as "berries", reports it only occasional in Belize. *Gentle* 8482 is accompanied by a label reading "small tree" -- obviously an error. Tamayo describes the plant as "planta fruticosa, rastrera-erecta". Ruiz-Terán & López-Palacios

refer to it as an "Hierba sufruticulosa, repente, ramificada, las ramas dispuestas de modo más o menos simétrico en varias direcciones radiales, 30--50 cm. de diámetro. Tallos 4-gonos. Hojas opositidecussadas, pequeñas."

Raeuschel (1797) erroneously records the species from Jamaica ["Iamaica"]. Steyermark cites his no. 89285 from Venezuela -- the Steyermark (1968) reference in the bibliography (above) is sometimes erroneously cited as "1969".

Loudon (1830) and Sweet (1830) tell us that this plant was introduced into cultivation in England in 1824 from "Trinidad", calling it the "spiked tamonea". Under the name *Tamonia mutica* Pers. they record its introduction into England in 1820 and call it the "awnless tamonia". Willdenow (1797) uses the German popular name, "wehrlose Traubennuss".

Kunth (1823) says of the species: "Crescit in Provincia Novae Andalusiae, prope Quetepe et Cumana", describing it merely as having "foliis hispido-pilosis; fructibus inermibus". Schauer (1847, 1851) cites *Blanchet 403*, *Lhotzky s.n.*, *Salzmann 434*, and *Sellow s.n.* from Bahia, Brazil, "*U. & B.*" *s.n.* [Humboldt & Bonpland?] and *Otto 983 & 1041* from Venezuela, and *Aublet s.n.* & *Perrottet s.n.* from French Guiana.

López-Palacios (1977) cites *Aristeguieta 5898*, *Cortés s.n.*, *Grosourdy Cat. 13 s.n.*, *Otto 984 & 1041*, *Ruiz-Terañ & López-Palacios 11577*, *Steyermark 57672 & 89285*, and *Tamayo 2683* from Bolívar, Venezuela. He comments (1975) that the species is "registrada hasta la fecha solamente para Bolívar y Monagas [in Venezuela], y que desde el punto de vista taxonómico no ofrece dificultad ninguna; se diferencia de sus congéneres en que el fruto no presente espinas. En esta especie ellas son reemplazadas por la prolongación de los dientes del cáliz." Knuth (1927) cites *Otto 983 & 1041* from Bolívar and *Humboldt & Bonpland s.n.* from Bermudez, Venezuela.

Aublet (1775) calls it "la tamone de la Guiane" and says "Cette plante vient dans l'île de CaËnne, sur le bord des sentiers & des chemins. Elle croît plus abondamment sur le route de Loyola, allant à l'habitation de Madame Dubilly. Je l'ai aussi observée en différents endroits de la Guiane dans les liene découverts." He notes that in this species the two lower (shorter) stamens are sterile, having their anthers aborted.

Material of *Ghinia spicata* has been misidentified and distributed in some herbaria, including material distributed by Mains, as *G. curassavica* (L.) Oken and has even been so reported by Standley (1924) from Belize. The latter species is easily distinguished by its sharply spinose fruit and is actually not known from Belize. Reports of *G. spicata* occurring in the West Indies are also erroneous.

*Blanchet 76*, cited below, is a mixture with no. 3397 (*Ghinia juncea*) on at least one sheet in the Brussels herbarium.

Citations: BELIZE: *Croat 23513* (Au), *24040* (W--2800455); *Gentle 1181* (F--733720, I, Ld, Mi, N), *4134* (Ld, Mi, N), *6687* (Au--224747, Ld, Ld, Ld, Ld, Mi, Mi, N, S), *8482* (Au--224438, Ld, Mi, N, S), *9473* (Au--224368, Ld, S); *Hunt 181* (W--2398662); *Liesner & Dwyer*

1429 (W--2800217); Mains 4118 (Mi); Peck 168 (G); Schipp 612 (Ca--426858, F--621916, G, Mi, N, S). GUATEMALA: Alta Verapaz: J. A. Steyermark 45247 (N). El Petén: Contreras 547 (Ld). NICARAGUA: Zelaya: Seymour & Robbins 5820 (N). VENEZUELA: Bolívar: Aristeguieta 5898 (N, W--2777288); Davidse, Ramia, & Montes 4633 (W--2788951); Ruiz-Teran & Lopez-Palacios 11496 (Ld), 11577 (Mi); J. A. Steyermark 57672 (F--1221910, N, Ve--26389), 89285 (N); Steyermark, Dunsterville, & Dunsterville 105448 (N); Tamayo 2683 (Ve, W--1907902). GUYANA: Herb. Forest. Dept. Br. Guian. B.409 (N, Wb). SURINAM: Focke 1029 (Ut); Leandré 70 (Le); Lanjouw & Lindeman 1764 (N); Splitgerber 744 (Le); Wullschlägel 784 (Br, Br, Br, Gt). FRENCH GUIANA: Aublet s.n. (S--isotype); Black & Klein 54-17397 (Z); W. B. Broadway 126 (N); Collector undetermined 355 (Cp); Herb. Harvey s.n. (Du--166395). BRAZIL: Bahia: Belem 3529 (Ld, N); Bierens de Haan 117 (Ut); Blanchet 76 (Br, Br, Br, N); Harley, Mayo, Storr, Santos, & Pinheiro in Harley 18491 (Ld, N); Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 15881 (Ld), 17497 (Ac), 17560 (Ld); Martius 2183 (Mu--547), s.n. (Mu--598, Mu--599). Ceara: Löfgren 719 (S). Maranhão: Eiten & Eiten 4178 (N, W--2445208). Paraíba: Coêlho de Moraes 2068 (Mm). Pernambuco: Pickel 3637 (F--849823, I, Mi, N, N, N). CULTIVATED: Germany: Herb. Zuccarini s.n. [Hortus bot. Monac.] (Mu--600).

*GHINIA SUBBIFLORA* (Urb. & Ekm.) Mold., Revist. Sudam. Bot. 4: 17. 1937.

Synonymy: *Tamonea subbiflora* Urb. & Ekm., Arkiv Bot. Stockh. 22 A (10): 106. 1929.

Bibliography: Urb. & Ekm., Arkiv. Bot. Stockh. 22A (10): 106. 1929; A. W. Hill, Ind. Kew. Suppl. 8: 233. 1933; Mold., Revist. Sudam. Bot. 4: 17. 1937; Fedde & Schust., Justs Bot. Jahresber. 57 (2): 401. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 25, 26, & 93. 1942; Hill & Salisb., Ind. Kew. Suppl. 10: 99. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 44, 48, & 186. 1949; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 283. 1957; Mold., Résumé 52, 56, 57, & 456. 1959; Angely, Liv. Gen. Bot. Bras. 35 & 45. 1960; Gibson, Fieldiana Bot. 24 (9): 230. 1970; Mold., Fifth Summ. 1: 96, 102, & 104 (1971) and 2: 879. 1971; Alain in León & Alain, Fl. Cuba, ed. 2, 2: 283. 1974; Mold., Phytol. Mem. 2: 89, 95, 96, & 548. 1980; Mold., Phytologia 47: 416. 1981.

An annual or perennial plant, 20--60 cm. tall; main root to 10 cm long, slenderly branched; stems many, erect or ascending, the lower ones thickened or even subligneous, to 4 mm. thick; upper branches minutely pilosulous; petioles filiform, 2--9 mm. long, minutely spreading-pilosulous; 1-af-blades membranous, ovate to oblong, 0.6--2.5 cm. long, 3--12 mm. wide, apically obtuse, basally subtruncate and slightly protracted into the petiole, marginally completely dentate-serrate, minutely pilosulous above and also beneath especially on the venation; secondary veins 5 or 6 per side, the lowest originating at the base of the blade, hardly prominulous above, green above, paler beneath; inflorescence axillary, 1- or 2-flowered; peduncles 3--10 mm. long, very shortly

spreading-pilose; bracts filiform, 1--1.5 mm. long; lateral pedicels scarcely 1 mm. long, pseudoterminal one above the bracteoles only 0.5--1 mm. long; calyx 3 mm. long, its tube obconic, membranous, rather thickly 5-veined, the veins minutely scabridous and excurrent in linear teeth about 1 mm. long; corolla pale-lilac, about 4.5 mm. long, its tube basally cylindrical, apically to about twice as wide, very shortly pilose within at the stamen insertion, the lobes unequal, more or less semiorbicular, the anterior ones subtruncate and longer, half the length of the tube; stamens didynamous, included, the longer pair inserted at the middle of the corolla-tube, the shorter ones at 1/3 its height; longer filaments during anthesis apically dilated into an ovate densely glanduliferous appendage, the shorter one unappendaged; style about 8 mm. long; stigma oblong, oblique; fruit turbinate, the body 3--4.5 mm. long, subapically 4-horned, the horns conspicuously unequal, two 4--5 mm. long, the other two 2--3 mm. long.

The species is based on *Ekman H.8844* from Quaternary calcareous soil along roadsides near La Source on the island of Gonave, Haiti, where it is described as rare, deposited in the Stockholm herbarium. Urban & Ekman (1929) cite also *Ekman H.4500* & *H.8850* from Hairi. They comment that "omnes aliae hujus generis species floribus in spicas pluri- vel multifloras dispositis gaudet; *T[amonea] scabra* Cham. et Schlecht. foliis similis praeterea calyce paullo majore et cornubus fructuum brevioribus recedit."

Collectors have found the species growing in wet places along roadsides, at 400 m. altitude, flowering and fruiting in July and August. Material has been misidentified and distributed in some herbaria as *Tamonea curassavica* (L.) Pers.

Citations: CUBA: Oriente: *Hioram 1777* (N). HISPANIOLA: Haiti: *Ekman H.4500* (Ca--608088, F--839465, Ld, Ld, Mi, S, W--1410030). HISPANIOLAN OFFSHORE ISLANDS: Gonave: *Ekman H.8844* (F--photo of type, Ha--photo of type, N--isotype, N--photo of type, Pi--photo of type, S--type, S--isotype, Si--photo of type, Z--photo of type).

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NOTES ON THE GENUS *HOSEANTHUS* (VERBENACEAE)

Harold N. Moldenke

Lack of time this late in life prevents my preparation of the complete and detailed monograph of this genus as originally planned and announced, but it has seemed advisable to place on record the bibliographic and herbarium notes on the genus accumulated by my wife and myself over the past 52 years. Explanation of the herbarium acronyms employed are fully explained in *Phytologia Memoirs* 2: 463--469 (1980) and are the same as used throughout this series of papers since 1933.